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ABSTRACT

Quality circles may be regarded as a form of organizational intervention strategy to enhance productivity and product quality through employee participation. Operationally, small groups of individual employees voluntarily meet regularly to (1) identify problems relating to productivity and product quality, (2) discuss them, (3) identify and analyze the causes of these problems, (4) recommend solutions to management, and (5) subsequently monitor the results. Although the concept was first introduced in Japan in 1950, there are now approximately 1,200,000 quality circles present in corporations on a worldwide basis, involving a membership of approximately 12,000,000 employees. Unfortunately, few empirical studies have appeared testing the viability of the quality circles concept, specifically in terms of desired organizational outcomes or communicative implications of their operation. Future research needs to test the specific effects of quality circles in various organizational contexts upon organizational functioning and the individual employee both to learn the degree to which they can be a successful intervention strategy, given the cultural differences from the country in which they originated, and to assess the conditions under which they operate most effectively. (HOD)

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CORPORATE QUALITY CIRCLES: THEORETICAL AND PRAGMATIC EXTENSIONS

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ABSTRACT

The purpose of this research was to examine quality circles from both theoretical and pragmatic viewpoints in order to assess them as an intervention strategy and to provide directions for future research. Specifically, the paper (a) briefly accounts the historical development of quality circles, (b) discusses their pervasiveness in organizations worldwide, (c) considers the quality circles concept within organizational theoretic frameworks, (d) describes operational/ procedural aspects of quality circles, (e) discusses the Japan-American cultural variations affecting utilization of the concept, (f) considers potential strengths and problems associated with quality circles, and (g) discusses optimal conditions for effective quality circle functioning. From this point, the paper describes the little emprirical research which has been conducted on organizational quality circles and points to potential future directions for such research by organizational communication scholars.

CORPORATE QUALITY CIRCLES: THEORETICAL AND PRAGMATIC EXTENSIONS

In recent years increasing interest has been shown by American corporations in the quality circle concept. In line with this increase, scores of books and trade journal articles have appeared describing step-by-step techniques for implementing quality circles and documenting success stories of their use in corporations around the globe.

The purpose of this paper is to examine theoretical and pragmatic extensions to the quality circle concept in view of the following questions: (1) do they simply represent a "passing fad," or do they have long-range potential which can contribute to the widely known productivity declines in American corporations and to the human relations aspects of organizational life; (2) to what degree have they been empirically tested by academic scholars; and (3) what are the communicative implications of quality circles, particularly in the context of small group theory as it applies to organizations.

Rudimentary Elements of the Concept

Quality circles may be regarded as a form of organizational intervention strategy to enhance productivity and product quality through employee participation. Operationally, quality circles are small groups of individual employees who normally work together; they voluntarily meet regularly to identify problems relating to productivity and product quality, discuss them, identify and analyze the causes of these problems, recommend solutions to management, and subsequently monitor the results.

Historical Development of Quality Circles

In 1950 an American expert in statistical quality control, William Deming, introduced the quality circles concept in Japan, as part of the

World War II reconstruction effort. The JUSE (Japanese Union of Scientists and Engineers), as well as the Japanese Government, reinforced the concept by making quality a national goal. In 1954 Juran, another American quality control expert, introduced the idea of managerial participation in quality control activities in Japan. From Deming's statistical orientation to quality control and Juran's concept of managerial involvement in the process, Japan revolutionized its industries. To further inculcate quality control into the minds of the labor force, training programs focused on the concept blossomed and soon became widespread, as well as regular magazine publications such as Quality Control for Foremen.

Deming's contribution centered on rigorous statistical methods to diagnose quality control problems and so monitor the production process. Juran emphasized the need for the involvement of managers and workers, not just quality control engineers, in a company in the quality control arena.

Prevalence of Quality Circles

In 1974 the quality circles concept was first introduced in this country, at Lockheed's Space and Missile Unit in Sunnyvale, California. The initial diffusion of quality circles in the United States, according to Wood, Hull, and Azumi (1982) took place mainly in large corporations, particularly quality conscious ones, such as those in the aerospace and defense industry, or in ones experiencing significant productivity difficulties, such as in the automotive industry. It is interesting to note that several of the Lockheed managers originally involved in the adoption of quality circles in American industry subsequently organized the International Association of Quality Circles (IAQC) which still exists today to provide an institutionalized forum for discussing and promoting the quality circles concept.

According to Barra (1983), there are approximately 1,200,000 quality circles present in corporations on a worldwide basis, involving a membership of approximately 12,000,000 employees. The author cites the following figures for the number of quality circles in various countries around the globe (p. 165):

Japan	1,000,000
Korea	50,000
Taiwan, China, Philippines, Thailand, Malaysia, and Singapore	50,000
South America (mostly Brazil)	50,000
United States	25,000
Canada	2,500
Mexico	1,000
France	1,000
United Kingdom, Belgium, Germany, Netherlands, Denmark, Sweden, and Norway	1,500

Relationship of the Quality Circles Concept

According to Nishiyama (1981), the purposes of a quality circle are to: (1) identify job-related problems; (2) to improve production methods; (3) improve production skills among circle members; (4) enhance worker morale and motivation; and (5) stimulate teamwork within organizational groups.

The quality circle facilitator functions, according to Wood, Hull, and Azumi (1982) are: (1) to promote and help implement the corporate quality circle program; (2) to train members in the quality circle meetings; (3) to guide the initial quality circle meetings; (4) to solve any problems which emerge within the functioning of the circle group; and (5) to serve as a liaison between the circle group and organizational personnel who control informational resources required by the group.

The quality circle leader, who directs the discussion which takes place, is often the supervisor to whom the workers in the circle normally report. Since the quality circle leader is typically expected to be supportive, non-directive, and non-evaluative, there is often a significant role shift required from that of work supervisor.

Quality circles are normally convened on a voluntary basis on company time. Leaders and members are provided training in various problem-solving techniques (cause-effect analysis, Pareto analysis, force field analysis, histograms) and group process techniques (nominal group techniques, brainstorming).

Adoption of a Japanese Work Concept to American Firms

At the core of evaluating the feasibility of the Japanese originated quality circles concept in American firms must be the consideration of the implications of cultural differences between the two countries and, in particular, ones affecting organizational management orientations.

Fitzgerald and Murphy (1982) point to five such differences: American organizational values stressing individualism, competition, profits and growth, minimization in decision making, and high reliance on status lines in contrast to Japanese organizational values stressing collectivism, collaboration, human competence, maximization in decision making, and low reliance on status lines.

Nishiyama (1981) and Ramsing and Blair (1982) point to other important cultural variations: (1) a tolerance for a certain level of product defects in American companies; (2) an adversarial role of unions in the United States in

contrast to a non-adversarial role in Japan; (3) the presence of a relatively homogeneous population in Japan, such that workers are less individualistic and more team-oriented than their counterparts in America; and (4) guarantees of job security and lifetime employment within companies in Japan.

Strengths of and Potential Problems with Quality Circles

Aside from the primary purpose of quality circles to enhance product quality and production process effectiveness, a number of by-products are possible, given that the circles operate as they are designed to and the conditions are optimal: (1) product quality conscious raising among employees is likely to occur; (2) organizational output measurement may become further refined; (3) employees learn new problem-solving skills and an increasing emphasis is made in the organization upon training and development; (4) members become sensitized to cost-reduction orientations; (5) team building within work groups may be stimulated, as well as pride in the outcomes of their efforts; (6) organizational planning and streamlining are made a priority among a greater number of employees; (7) the potential of various employees may be realized; (8) a collaborative spirit among workers may emerge; (9) potential organizational solutions are presented on the basis of thorough analysis; (10) communication flows become restructured between management and workers; (11) organizational change may become easier; and (12) workers receive greater feedback on task outcomes through group functioning.

Various problems may emerge with the adoption of the quality circles: (1) an initial decline in productivity may take place due to the orientation and problem-solving time required by the circles and contingent upon the ability of the circles to function effectively; (2) a considerable investment

of time and personnel is involved in implementing and operating the quality circles in an organization as well as in providing the necessary training for leaders and members; (3) a threat to existing lines of authority is possible, since employees become participants in identifying system problems and providing recommendations for solutions; (4) initial confusion may prevail in the setting up of quality circles and the involving of employees in the process; (5) proposals rejected by management may dampen circle member morale; and (6) lower and middle management personnel may feel threatened by quality circle activity, since outcomes may be submitted directly to higher level management.

Conditions for Effective Quality Circle Functioning

Quality circles cannot possibly be operationally effective unless management is willing to invest not only time and human resources into the process, but also be willing to deal with recommendations coming through circle activity which may challenge traditional forms of operational procedures, policies, and relationships.

Quality circle groups must have significant concerns upon which to concentrate their activity; inconsequential concerns will undermine the motivational thrust of the group. In addition, worker problems do not always fit into the quality circle concept; ones that do not need to be isolated and channeled through other means of resolution.

Because quality circles are driven in part by a concern for product quality, they are probably most effective in situations where human factors are a primary consideration in production efforts. In addition, the more product quality oriented the firm, the more appropriate quality circles become as an intervention strategy. Quality circles may also be more useful with blue

collar workers than white collar workers where performance measures are more difficult to pinpoint and individualistic orientations become more prevalent.

Empirical Research on Quality Circles

Although a number of conceptual papers have been written on quality circles (e.g., Nishiyama, 1981; Ramsing and Blair, 1982; Wood, Hull, and Azumi, 1982), few empirical studies have appeared testing the viability of the quality circles concept, specifically in terms of desired organizational outcomes or communicative implications of their operation.

Stinnett and Perrill (1982) conducted a study of quality circles in a circuit board factory. The unit tested was separated from the main plant. Pre- and post-measures were made in regard to the 97 employees participating in the factory quality circles. Baseline productivity measures were taken. No control group was utilized in the study.

Personal assessments were made specifically in regard to the following: product quality (importance of producing a quality product), work measures and feedback, reward, leadership, organizational structure effectiveness, participation, communication effectiveness, satisfaction, peer relationships, and group process. Six months intervened between the pre- and post-measures. In addition to the perceptual assessments, product quality data were collected in terms of the following: boards scrapped, boards passing first inspection, and boards passing final inspection. Correlational tests were run between employee ratings of the quality circle process and the outcome measurement components.

Although the researchers made no attempts to produce any causal claims from the data collected in the study, they did uncover intriguing results which deserve validation in other organizational settings.

Jenkins and Shimada (1983) conducted a controlled field experiment on the impact of quality circle training procedures and activities on worker performance in an electronics company. Significant improvements were demonstrated in regard to specific performance parameters relating to product quality. Specifically, worker gross output rates were not found to change significantly, but the work quality was shown to improve. Workers were found to commit fewer errors, and the errors that they did commit were found to be less expensive to rectify.

Pragmatic Evaluation of Quality Circles

Wood, Hull, and Azumi (1982) developed the following criteria and indicators for the pragmatic assessment of quality circle programs (p. 27):

(1) Productivity
- o group/departmental performance rates
- o individual performance rates
- o standardized unit costs

(2) Product Quality
- o reject rates
- o client evaluation

(3) Cost Savings
- o materials/labor costs
- o machine maintenance costs
- o wastage costs

(4) Worker Morale
- o satisfaction with supervision
- o satisfaction with co-workers
- o satisfaction with work content
- o satisfaction with organization
- o satisfaction with QCs

(5) Attendance
- o absenteeism
- o turnover
- o attendance at QC meetings

For either empirical or pragmatic evaluation of quality circles, several typical research issues must emerge: (1) the need for pre- and post-measurements; (2) the isolation of moderating variable effects; (3) the need for comparison groups, specifically control versus treatment groups; (4) the realization of potential temporal effects in the implementation of quality circles, such as novelty effects at their inception; and (5) the need for multiple measurement forms.

Future Empirical Directions for Quality Circles

The concept of quality circles, as Stinnett and Perrill (1982) suggest, provides considerable potential for organizational communication scholars for empirical research.

Jablin (1979) and Putnam (1983) have argued for the influx of field research in group communication in the organizational context to balance out the myriad of laboratory studies that have been conducted, primarily out of the organizational context. Quality circles may provide organizational communication researchers with a useful outlet to perform such studies.

Downs and Hain (1982) and Hellweg and Phillips (1982) have described problems which exist in the literature in regard to establishing a link between communication and productivity or performance. Some of the difficulties involved are centered in developing meaningful and consistent definitions and operationalizations of constructs and variation in measurement techniques. Quality circles, once again, may serve as a useful outlet for organizational communication scholars to further pursue this area of endeavor.

From a pragmatic view, Ramsing and Blair (1982) point to the following questions about quality circles which could in some variation be put to

empirical test: (1) how would the quality circle approach measure up to socio-technical intervention techniques; (2) would American corporations benefit more through automation expenditures than through the development of quality circles; (3) are quality circles best implemented into ongoing workgroups; (4) are quality circles more effective when introduced as a second intervention strategy after solid management-employee relationships have been established; and (5) is the quality circles approach superior to other intervention techniques such as team building, where the focus is upon the improvement of interpersonal relations within the work group and in the supervisor-subordinate dyad.

Quality circles from an empirical viewpoint might lend themselves well to a number of studies utilizing variables important to communication functioning within organizations:

(1) Small group studies on cooperative and competitive orientations, group history, group size, leadership strategies, individual versus group contributions, problem-solving processes.

(2) Motivational studies, specifically in regard to intrinsic and extrinsic forms of motivation, rewards and behaviors, presence of social cues.

(3) Role conflict and role ambiguity studies.

(4) Organizational socialization studies.

(5) Organizational and communication climate studies.

(6) Supervisor-subordinate studies to assess upward distortion effects, supervisor communication style, semantic information distance effects, perceptions of supervisor-subordinate credibility and homophily (as a function of quality circle

participation), effects of various forms of perceived power on quality circle interaction, effects of quality circle interaction upon perceptions of supervisor satisfaction.

(7) Feedback studies (utilization of immediate and delayed forms of feedback, group versus individual feedback, quality and quantity of feedback).

The purpose of this paper has been to examine the quality circles concept as an organizational intervention strategy in view of their communicative implications, both empirically and pragmatically.

Future research needs to further test the specific effects of quality circles in various organizational contexts upon organizational functioning and the individual employee to (1) learn the degree to which they can be a successful intervention strategy given the cultural differences from the country in which they originated; and (2) assess the conditions under which they operate most effectively.

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